AN ANALYSIS OF AN INTERDISCIPLINARY EXPERIENCE IN ART, MUSIC AND SOCIAL SCIENCE WITH FIFTH GRADE CLASSES IN A TRADITIONAL SCHOOL

An abstract of a Field Report by
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The problem. Literature in various fields increasingly is stressing the importance of an interdisciplinary approach to education but such programs are not in evidence. This study is an analysis of an interdisciplinary experience in art, music and social science with fifth grade classes in a traditional school.

Procedure. Three classes of fifth grade children at Barlow Granger Elementary School in Des Moines, Iowa were the population samples of this study. The author was the art teacher who initiated an interdisciplinary study with the music and social science teachers about Africa for student participation. An African program was given by the children for their parents at the end of the unit of study. A follow-up study was done the following year with two fifth grade classes, which composed a control group and an experimental group. The experimental group was tested and data was gathered.

Findings. The results of the study showed that high motivation stimulates children and has far reaching effects. The interdisciplinary experience brought about behavioral changes that tended to be permanent in the students. Small group interaction promoted peer approval.

Conclusions. Art does have a positive effect on the learning process of students through motivation and stimulation. It aids the human element, helps develop self-confidence, promotes the feeling of success and provides access to positive behavioral changes. Innovative teaching methods can be implemented in traditional schools. It takes more teacher energy, cooperation, assistance and administrative backing.

Recommendations. The writer recommends from this study that further research be done in man's thinking process with teaching methods designed to educate that process. Interdisciplinary teaching has substantial advantages and should be considered by more schools.

AN ANALYSIS OF AN INTERDISCIPLINARY EXPERIENCE IN ART, MUSIC AND SOCIAL SCIENCE WITH FIFTH GRADE CLASSES IN A TRADITIONAL SCHOOL

A Field Report

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The School of Graduate Studies

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by

Beverly J. Radcliffe

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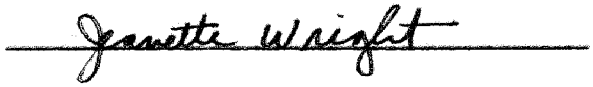

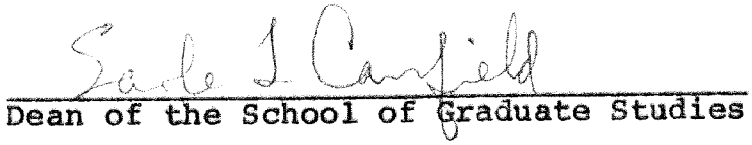

Dean of the School of Graduate Studies

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Chapter 1

INTRODUCTION

The role of the schools of today has taken on increased importance in the total education of our youths. Social problems, divorce rates, crime rates, the economy, the job situation, political influences, etc., have placed the schools in a position to educate many facets of the human being. To help young people cope in this changing world, education has been making many changes.

Art education has felt the economic crunch to the point of being deleted from many elementary programs. Yet by its very nature it can be a major force in general learning because it relates thinking and feeling.

With declining urban enrollments it is difficult to justify new open space buildings to ideally accommodate interdisciplinary programs. However, traditional schools can initiate such programs where teachers and administrators are willing to work together. This investigation has been done to encourage such an effort.

THE PROBLEM

Statement of the Problem

There has been considerable material written about the way man learns and the part that art plays in the

learning process. Some art educators have begun innovative programs dealing with such an issue but there are too few interdisciplinary programs in existence at the present time. This study is an effort to further investigate interdisciplinary teaching in a traditional school environment.

Scope and Limitations

The population for this study consisted of 73 fifth grade students taught in three different art classes by the writer. The students were grouped heterogeneously. The length of the study was seven weeks and was done in Des Moines, Iowa at Barlow Granger Elementary School.

Need of the Study

Art education has been treated as a frill in many public school systems. Creative thinking is not evidenced in academic testing programs, as though creativity plays no part in intelligence. Most school systems do not plan curricula where subjects are interrelated or where the fine arts make a contribution to academic study.

The National Arts Endowment has provided means and encouraged various innovative art programs, some of which have been directed towards interdisciplinary humanities programs. These programs have inspired and motivated children. For example, IMPACT (Interdisciplinary Model Programs in the Arts for Children and Teachers) is "a vision of an educational process which embraces all aspects of

human life, a vision which regards the world of emotions as equal in importance to the world of ideas."[1] We need to balance our greatly computerized world of today with human sensitivity. The best place to emphasize it is in our schools with our children.

Fragmented thinkers see the world in categories. "This publicly supported mass production learning failure system" exists for all classes of American people. Students are not taught how to integrate subject matter. Many children have skills but "no real history of successful problem solving interpersonal and philosophical experiences in their repertoire to enable them to deal with other human beings, adults in particular." Often children do not see meaning between academic and social aspects of life.[2]

One solution to this problem is to use the interdisciplinary approach in our schools, to coordinate the disciplines into a total learning process which is, "thinking, knowing, experiencing and doing."[3] Then learning

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[1]Ronald Terrell, Dorothy Williams, Dorothy Blanchard, "Artists-in-the-Schools: Why Bother?", Art Education, XXVII No. 8 (November, 1974), 21-23.

[2]George Conrad, The Process of Art Education in Elementary School (Englewood Cliffs, New Jersey: Prentice-Hall, Inc., 1964), p. 22.

[3]Harold L. Cohen, "In Support of Human Behavior," Art Education, XXII, No. 7 (October, 1969), 10-13, 21, 40.

would no longer be fragmented. The arts, as part of the total curriculum, would no longer be a mere appendage as they have been in many school systems today. Art should be a part of the total learning process.

DEFINITION OF TERMS USED

Critique. Comes from the word criticize but in the writer's Art classes the emphasis is on the positive. It also serves as a review of the project and direction. It clarifies grades and comments written on the art work.

Enrichment activity. An Art activity for students who finish their project early. The enrichment bares a relationship to the major activity and allows a more in-depth experience as the student follows through.

Feedback. The teacher gives a presentation or makes a point to the students. Feedback is any form of communication to the teacher from the students about that presentation.

Input. Another word for feedback.

In-service. A meeting designed for teachers to enhance their professional growth, encourage their attainment of attitudes and skills most appropriate to their particular educational tasks.

Interdisciplinary. The study of two or more subject areas taught together in such a way as to relate the subjects to each other.

Specialists. A teacher who by state law is certified to teach a specific subject such as art, music and health and physical education. Iowa specialists in art and music are certified to teach grades K-12.

Self-contained. A class of students who have all their subjects in one room from one teacher.

Team teaching. Two or more teachers who prepare, plan and sometimes execute learning experiences together for students.

Traditional school. An arrangement of rooms within a building where each teacher has his or her own classroom.

Unit. A series of learning experiences about a single subject.

Upper unit. The students are divided into upper and lower grades referred to as grade units. The upper unit encompasses fifth and sixth grades (fourth grade is included in some schools).

ORGANIZATION OF THE REMAINDER OF THE FIELD REPORT

The remainder of the field report is divided into three chapters. Chapter 2 is divided into four sections discussing related literature. The first section of Chapter 2 is concerned with major historical events in the development of art education in the schools. The second section of this chapter is concerned with theories about the way people learn. The third section of literature has

selected interdisciplinary programs in which learning and experiencing art has had a stronger general meaning than when it was taught as a separate subject. The last section contains information about the use of team teaching.

Chapter 3 contains the process of the study, and describes the organization activities in the first section. The second section describes the results of the study. Section three is about an in-service given for the teachers concerning the experiences of the study. The last section describes a follow-up study for the purpose of obtaining data.

The last chapter is a summary of the study which includes conclusions. Limitations are discussed and conclusions are drawn from the study by the writer for further research concerning advantages of interdisciplinary learning for elementary children in traditional schools.

Chapter 2

REVIEW OF THE RELATED LITERATURE

A review of the literature indicates that educators have been aware of the need for more research concerning the way man thinks and creative process or emotional and sensory components which play a part in his total intellect. There is a need to concentrate on the education of the total person rather than educating parts of that person. Curriculum should be designed to aid this learning.

TRENDS OF ART EDUCATION

Some Historical Events of Art Education in America

Art education in America has become a profession since Benjamin Franklin advocated the teaching of art in 1770. During the first half of the nineteenth century, it was taught when individual teachers cared to teach it and without formal guidelines. Art was to boys, as an aid to industry through geometric principles of mechanical drawing. Drawing was a mark of culture in upper-class private girls' schools. In 1864, drawing became a required subject in the Boston Public schools. Drawing was taught with "textbooks" in elementary schools and by a special art teacher in the high school.

During the 1870's Walter Smith became the first

State Director of Art for Massachusetts, the first Supervisor of Art (for Boston) and established the first school to educate teachers of art. He taught the mechanics of art with a relationship to writing. A good design resulted from the mastery of single straight lines, curved lines, and then combinations of these. This theory could well be related to a formula. Therefore, art was not a talent, but a training.[1]

American psychologist G. Stanley Hall directed the Child Study Movement in the 1880's, which was concerned with the mental, physical and psychological growth of children. In conjunction with the thinking of Hall, John Dewey's interest was the child's self expression through visual means. This led to the advocation of a variety of media to better aid that expression.

By 1900 art education had progressed to art books and magazines, art organizations and art as aesthetics. This era was known as "picture study" because by so doing a student could learn beauty from the old masters of art. Paralleling the picture study direction, Arthur Wesley Dow developed the concept of principles and elements of art giving art an order and system by which it could be taught

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[1]Elliot W. Eisner and David W. Ecker, Readings in Art Education (Waltham, Mass.: Blaisdell Publishing Co., 1966), p. 3.

and a basis from which to produce harmonious compositions.[1]

Also, at this time, another educator, Walter Sargent, was interested in children's drawings as a mental activity or mental process. Sargent studied the ideas of psychology and human behavior.

The Influence of John Dewey

A very significant influence to art education in the 1920's and 30's was John Dewey's idea that man's intelligence was based on his experience and therefore the focus of education should be on the experiences it offered to the student. For him, schools needed to provide physical, emotional, and intellectual freedom for the pupil...."the child as a whole." Creativity was a form of intelligence. The emphasis on art activity should be the process.[2]

At the same time Dewey was emphasizing the total child, one of his disciples, William Heard Kilpatrick, was working out his idea that art should be related to other subjects or part of the total curriculum and not an appendage to it. Margaret Naumberg, who was influenced by Freudian psychology advocated art as therapy and a communication of man's inner feelings. Art, then, was creative self expression, a part of creative thinking used in all

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[1]Eisner and Ecker, op. cit., pp. 4-7.

[2]Ibid., p. 9.

areas of man's intellectual and emotional growth.[1]

The Development of Child Art in Europe

During the time of America's growing pains in art education, Europe produced several people who made significant contributions to theories of child art. Rousseau believed that the child was unique with his own needs in art and that he should have mental activity fitting those needs. In his book written in the late 1850's Herbert Spencer said that the important thing is not whether the child produces good drawings but that through his drawings he is developing his faculties, his powers of manipulation and exercising his perceptions. In 1881, a German named Alfred Lichtwark published a book in which he related the similarity between the representations of very young children to that of primitive man. These symbols are not only universal but also relate all ages of mankind.[2]

James Sully wrote a book in 1895 in which he parallels the child's abstractions with those of the mature artist who also uses delineations and selections rather than making a literal reproduction.

Ebenezer Cooke in 1885, read his paper to the Education Society about the Art Section of the International

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[1]Eisner and Ecker, op. cit., p. 10.

[2]Wilhelm Viola, Child Art (2d ed.; Peoria, Illinois: Chas. A. Bennett Co., Inc., 1944), pp. 7-8.

Conference on Education one year earlier. He spoke of Rousseau and Froebel who essentially believed in what we now refer to as developmental stages of the child. He also agrees with Sully that,

> 'Training a faculty means regular calling it into activity by supplying the conditions of its existence....' If the faculty is not cultured when possible, we may never gain the higher forms and may weaken others....It is possible to use the apparatus and neglect the spirit.[1]

Of course, he is speaking of the faculty of children's art.

Franz Cizek

The most significant person to the theory and development of children's art was Austrian born Franz Cizek. He considered himself a painter, not a teacher and is credited with opening and teaching the first art school for children. His goal was simply: "To let them grow, develop and mature." The ages of the school children varied from two to fourteen years of age. Cizek taught for 40 years. It is said that the child psychologist came after Cizek to prove what he had already known for years.[2]

Cizek was interested in the "struggle" a child makes in finding the form that suits him. The struggle is creativity. When the child masters the form it is empty. It was

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[1]Viola, op. cit., p. 10.

[2]Ibid., pp. 12-13.

the mistakes of the child that was wonderful to Cizek. A teacher's refinement made the "document" dull.

"Everything memorized is worthless. The least of the things experienced within is more valuable than the most skillful imitation."

Cizek accurately looked upon himself as having liberated the children. "Child art is an art which only the child can produce. There is something that the child can also perform, but that we do not call art. It is imitation, it is artificial."[1]

Exploring Art Materials in the 1940's

A more progressive trend of art education in America began in the 1940's when the public schools began to explore a wide variety of materials. The idea was to give the individual student more possibilities with which to express himself.

The 50's - A Period of "Faith"

Charles M. Dorn calls the 50's, "an era of commitment and conviction rather than one of strategies and paradigms." He refers to the title of "Faith of the 50's" given by the National Art Education Association's (NAEA) first executive secretary Ralph Beelke. There was a lack of research and therefore no firm theories about the role

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[1]Viola, op. cit., p. 34.

of art in education.[1] The 50's did lend themselves to general creativity, significantly influenced by Viktor Lowenfeld's stages of the child's artistic development, plus Manuel Barkan's work in art education and J. P. Guilford's contributions in child psychology.[2]

The 60's - A Period of "Inquiry"

Dorn appropriately described the 60's as a period of "inquiry", "a period of the sciences in art education.... NAEA began to publish Studies, A Journal of Issues and Research; to conduct workshops developing behavioral objectives; and sponsor developmental conferences on newer media, curriculum and supervision." There were federal funds and programs. More conferences were held and more literature written than in any other period. There was more variety in curriculums, attention given to different types of students, and a wide variety of philosophies about art in education. All of this often resulted in more confusion for the art teacher.[3]

Eisner describes the 60's as a media oriented period

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[1]Charles M. Dorn, "Professional Values Ambiguities and Ambivalence," Art Education, XXIX, No. 2 (February, 1976), 5.

[2]Elliot Eisner, "Making the Arts a Reality in the Schools of Tomorrow--An Agenda for Today," Art Education, XXIX, No. 3 (March, 1976), 21.

[3]Dorn, op. cit., pp. 5-6.

with art as a discipline. He further described the "trinity of goals...the productive goal, that aimed at enabling children to acquire the skills needed for using art materials as media for personal expression; the critical goal, that aimed at helping them learn how to see the world from an aesthetic frame of reference; and the historical goal, that goal aimed at helping children understand the arts as an integral aspect of human culture." The necessity of these goals developed in defense of competition from the factual areas of science and mathematics. Art Educators challenged themselves to set out the uniqueness of their field. The broad areas were: "Using materials as media for expressive purposes, developing an ability to see aesthetically and understanding the arts in culture."[1]

The Direction of the 70's

The general progress of art education thus far into the 70's has been less than either Dorn or Eisner had hoped. Dorn refers to it as the "silent 70's" and says that it needs to become a period of "absolutes." Art educators are confused and so are their values. They want to know more about facets of education such as career education, environmental education, behavioral objectives, etc. Too many choices have aided the confusion, and professional

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[1]Eisner, op. cit., p. 21.

priorities need to be met.[1] Eisner implies that the 70's should be a period of accountability. Through the help of research in art education, educators should define the educational process.

SOME THEORIES ON THE WAY LEARNING OCCURS

Synaesthesia

Neal Appleby believes that the emotional part of man is as important as the intellectual and that both need to be incorporated into learning experiences by means of synaesthesia.

Synaesthesia is the "phenomenon of cross-sensory perception." One of the senses evokes a response from another sense giving the learner more information and personal knowledge. This varies from one learner to another depending on the degree of the emotion involved. It is a natural process which the younger child relies on greatly as he perceives his environment. The adult seems to have outgrown his use of multi-sensory perception and responds to stimuli with a "specific appropriate sense," which he then attempts to communicate visually. During the process of growing up, man loses his multi-sensory perception and settles for fragmented single-sensory perception. The few persons who mature retaining some of their synaesthetic

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[1]Dorn, op. cit., p. 6.

abilities are found to be of exceptional aesthetic sensitivity, such as artists.

The learning process in today's school is "almost entirely visual as well as being fragmented, linear and sequential." For example: science tells us what water is made of and its temperature but does not tell us, what it feels like to the body, how it looks or smells after or during a rain, or about its qualities of reflection, etc., all of which gives the learner additional information about water and helps him to personally identify with it according to his own experience. This is part of the self-actualization process described by A. H. Maslow.[1]

The synaesthesia process seeks to maintain that natural sensory balance found in children, then develop learning experiences that help the child's social, intellectual and personal development based on his use of sensory perception. The process teaches an awareness of these perceptions related to the intellectual experiences and that sensory perceptions can be relied upon because they are a way of knowing. The desired outcome is a "wholly functioning human being, participating creatively in the continuous process of his own education, development, and growth."[2]

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[1]R. Neal Appleby, "Synaesthetic Education for Sense Ability," Art Education, XXVII, No. 3 (March, 1974), 24-25.

[2]Ibid., p. 25.

Visual Thinking and Associative Learning

As we visualize and associate materials through our thoughts, we develop a third dimension of our minds. "This can be accomplished through visual thinking, which is the ability to perceive, ponder, and see actual shape in our thoughts, and through making associations." We think visually and in imagery form. In written material, it is the shapes and relationships in our minds that allow us to completely understand what is read.[1] Visual thinking has potential in all disciplines.

"Associative learning" is "the practice of connecting various learned materials" as in cross-sensory perception which can describe or relate a scent with a sound or color. It gives more complete information. Associative learning has foundation in a child's fantasy. Therefore, if educators share their imagination with their students, learning may become more spontaneous and natural.

Visual thinking and associative learning go together and yet can be independent. Both are the basis of interdisciplinary learning which is natural to learning and life.

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[1]Linda Ackerman, "Visual Thinking and Associative Learning," Art Education, XXVII, No. 8 (March, 1974), 30.

The Arts Process or Life Process

Maynard Gunter believes that the basis for interdisciplinary arts programs is the "Arts Process" or "Life Process" which is "(1) sensing oneself and surrounding works, (2) responding to the things sensed, and (3) expressing these responses through media, technique, aesthetics, creativity, and imagery."[1] This process is common for all the arts, for all people at all ages, degrees of accomplishment or experience. Each of the arts also has a uniqueness. Therefore, it is necessary to find a common balance between the commonalities and uniquenesses.

Gunter recommends that the elementary years of education should emphasize sensing and responding with a "single curriculum of interrelated, flexible components rather than isolated subjects." Secondary schools should emphasize phases involving expression. Breadth and depth experiences in appreciation and performance should be provided in all the grades.[2]

There are Two Sides of the Human Brain

A most significant point about the thinking process was discovered by Ronald E. Myers and R. W. Sperry in 1951

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[1]Maynard Gunter, "The Arts Interdisciplinary Programs, and Teacher Education," Art Education, XXVII, No. 3 (March, 1974), 20.

[2]Ibid., p. 21.

who found that man has two independent parts of the brain. The investigators severed the optic chiasm and the callosum, which is an isthmus of nerve tissue connecting the left and right hemispheres of the brain in higher animals. Experimenting on a cat, they found that each eye dispatched information to its own side of the brain, right to right and left to left. When one eye was covered the cat was presented with a problem, learned to perform a task and responded normally but when the cover was removed and placed over the opposite eye, the same problem was presented and the cat showed no signs of recognition. It had to relearn from the beginning with the other half of the brain.[1] In other words, when the commissures are cut, training does not transfer from one hemisphere to another.

Further investigation was done for medical reasons on human patients with uncontrollable epilepsy. By severing the corpus callosum, seizures were totally eliminated without "noticeable changes in the patients' temperament, personality, or general intelligence."[2] There was also evidence that the right hemisphere would prevail over the left when there was opportunity to express itself,[3] and that the intelligence of the right side could correct the

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[1]Michael S. Gazzaniga, "The Split Brain in Man," The Nature of Human Consciousness, ed. Robert E. Ornstein (San Francisco: W. H. Freeman and Company, 1973), p. 87.

[2]Ibid., p. 88.

[3]Ibid., p. 94.

judgments of the left.[1] The right side can "independently generate an emotional reaction."[2]

The following chart distinguishes some of the differences found by researchers since 1951, between the two sides of the human brain:

Left Hemisphere Dominated	Right Hemisphere Dominated
Verbal	Pre-verbal
Analytical	Synthetic
Abstract	Concrete
Rational	Emotional
Temporal	Spatial
Digital	Analogic
Objective	Subjective
Active	Passive
Tense	Relaxed[3]

Several art educators have stressed the need to verbalize about art. Susanne Langer makes an interesting point about language used for description. Direct sensual feeling or subjective experience usually has no name. It is the "inward life" of a human being. Because it has no name, it has no language and is difficult to project into verbal communication. We therefore resort to the use of a metaphor which is the symbol of an idea expressed by language. This symbol formulates a new concept. The original subjective

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[1]Gazzaniga, op.cit., p. 96.

[2]Ibid., p. 97.

[3]Arlis Parker and Arnold L. Willems, "Man's Brain and the Schools' Curriculum," Kappa Delta Pi RECORD, April, 1977, p. 98.

experience with its impact and intricacy cannot be fully shared or reproduced. In trying to do so, the experience frequently is oversimplified.

A work of art then is like a metaphor. It is a symbol or projection of subjective feeling. To the viewer the emotion in the art work is not a symbol but is presented so that the "symbol and meaning appear as one reality." On the other hand, the artist becomes objective about his subjective experience, merges this with what he knows of human nature and moves to symbolism that may exceed his own personal experience.[1]

Ernst Cassirer says that art and science need each other's uniqueness. A pair of eyes are to the dimension of space as the depth of human experience is to alternating our views of reality.[2]

Lawrence Kubie uses the word "preconscious" to name the source in the human mind where creativity takes place. He describes it as an area that receives coded signals and data from experience of thought, feeling, and emotion and where meanings overlap. This is the common core of all

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[1]Susanne K. Langer, Problems of Art (New York: Charles Scribner's Sons, 1957), pp. 22-26.

[2]Ernst Cassirer, "Art," Essay on Man (New Haven, Conn.: Yale University Press, 1944), p. 170.

creative thinking, common to all disciplines.[1]

Eisner refers to Michael Polanyl who believes man has a sense of knowing that cannot be described in words: and to Sir Herbert Read who thought that total education could not happen without art. His idea was that verbal communication has an advantage when it is preceded by images because the image helps consciousness.[2]

The implication to education according to the information from these researchers and writers is that we are educating half of man's brain and therefore man is getting only half an education. Education emphasizes academics, the verbal and logical. We test for academic learning outcomes. "What is measured and counted, counts. What is not counted doesn't count since it can't easily be measured."[3] What we are counting is the left side of the brain. This material implies there is enormous power in the right hemisphere where creativity resides. A great deal more research needs to be done but the implication could put art education in par with the academics or exceed it.

The schools need to base a curriculum on a type of

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[1]Lawrence Kubie, Neurotic Distortion of the Creative Process (Lawrence, Kansas: University of Kansas Press, 1958), pp. 30-31.

[2]Eisner, op. cit., p. 21.

[3]Ibid., p. 22.

thinking that fits a "three-dimensional universe." One type of thinking is the "unconscious reaction" to such basics as are learned in automatic responses. A second type of thinking is the "recipe thinkers" working out "recipe problems". They are products of today's education because the emphasis is on one hemisphere of the brain which involves results from drill, repetition and formulations. "He is not taught how to think, he is told to 'think' and left with his frustrations." The third type is inspirational thinking which comes from the other side of the brain, solves the problems of the second type of thinking, and fits the three-dimensional universe.[1]

Gazzaniga says,

> It is entirely possible that if a human brain were divided in a very young person, both hemispheres could as a result separately and independently develop mental functions of a higher order at the level attained only in the left hemisphere of normal individuals.[2]

Bogen points out that Eastern Cultures seem to have advanced the use of the right side of the brain more than Western cultures.[3] Research in this area could expand our

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[1]Gazzaniga, op. cit., p. 100.

[2]Ibid.

[3]Joseph E. Bogen, "The Other Side of the Brain: An Appositional Mind," The Nature of Human Consciousness, ed. Robert E. Ornstein (San Francisco: W. H. Freeman and Company, 1973), p. 124.

knowledge.

The Union of Hard Core and Soft Core Subjects

Richard G. Wiggin says that science is a "hard core" subject and deals with "how", while art is a "soft core" subject and deals with "what". He proceeded to relate these subjects on the basis of Leonardo da Vinci's view of them, "as part of the same human search for understanding and meaning...part of the perceptual process."

1. They "involve the same perceptual act of observing and abstracting meaning from the environment or the self."
2. Both involve observation, "sensitizing, drawing inferences, forming these inferences and testing the validity of the form."
3. They "share a common base in perception."
4. The principal difference is the emphasis on "process or product, the what or the why and the subjective or the objective decision-making process."

Speaking of an interdisciplinary study in the humanities Wiggin writes that it "leads students to realize that different subject disciplines are merely different, artificially constructed views of the same idea."[1]

EFFECTIVE INTERDISCIPLINARY PROGRAMS

IMPACT

The Interdisciplinary Model Programs in the Arts

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[1]Richard C. Wiggin, "Art and Science," Art Education, XXII, No. 7 (October, 1969), 19-20.

for Children and Teachers (IMPACT) was started in July 1970 for a period of two and one-half years. The funds were made available through the Teacher Retraining Authorization of the Education Professions Development Act and were allocated to the arts. The four professional arts education associations developed a plan with broad goals. Major objectives were to "achieve parity between the arts and other instructional areas and between the affective and cognitive learnings provided in the total school program" and to expand the total school program for affective learning experiences through aesthetic education by infusing the arts into the total curriculum. Another rationale for the program was to develop quality in the arts through the use of resource people for enrichment. In-service workshops for staff and administration was essential to the success of the project.[1]

Five different project sites were selected on the basis of diversity, having one common factor, that of being located near institutions of higher learning for the purpose of obtaining resources and assistance. Each site set out its own goals and was treated independently of the others.

The IMPACT project, in general, was a success. All

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[1] Arts IMPACT: Curriculum for Change - A Summary Report by the Arts IMPACT Evaluation Team, Pennsylvania State University, University Park, Pa., March, 1973, pp. 2-3.

the broad goals were realized. Some other key success factors were:

> Flexible guidelines allowed for individuality within a common goal.
>
> The project coordinator was also a good public relations person.
>
> There was a strong correlation between the success of a program and the support of its administration, especially the principal.
>
> Teachers had a spirit of cooperation instead of competition.
>
> Teachers became flexible in their classrooms.
>
> The arts increased students self-confidence and fostered self-esteem.
>
> The arts had a positive effect on the academics.
>
> There was a better balance between cognitive and affective experiences.
>
> Students had a more favorable attitude toward school.
>
> Interest and awareness in the arts, increased in students and teachers.[1]

The most success was found where staff and administrators had the highest degree of commitment. An excellent example of this was at Cranbrook and Eastgate elementary schools in Columbus, Ohio which was one of the five selected sites. The arts not only became integrated but blended with the academics and became part of the lives of students, staff and administrators.

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[1] Arts IMPACT, op. cit., pp. 40-43.

One of the experiences for sixth grades at both schools was a Greek drama festival for which the students wrote the scripts, costumes, did stage sets, wrote the score, played the music, acted and danced the entire production. Students learned that "their own experiences could be sources for artistic ideas."[1]

The problems were: the project outcomes had not been clearly defined, the individual projects needed to state outcomes in behavioral terms, and there was a "lack of provision in the initial grant for overall project management and coordination." The Rockefeller Foundation, among other significant contributors, underwrote the cost of hiring a half time project coordinator who was Gene Wenner. The evaluation team faced difficulties of time, distances to travel, diversity of programs, strategies of teacher retraining, and measuring the content of the arts program.[2]

"Visual Art in Interdisciplinary Learning"

When Don Brigham began a career of teaching art in public schools (late 1950's), he found that art was an isolated subject, separate from the total school curriculum and that the art assignments themselves were only

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[1]Gene C. Wenner, "Today I'm Going to Build a Twelve-Foot Eagle: Images of IMPACT at Five Project Sites," Music Education Journal, LIX, No. 5 (January, 1973), 34-35.

[2]Arts IMPACT, op. cit., p. 5.

superficially related to the knowledge of art. A few years later, when he became art supervisor in Attleboro, Massachusetts, he hired other art teachers and together they developed a new curriculum based on theories of Rudolf Arnheim, Bartlett Hayes, Gyorgy Kepes, and Piaget in the area of visual perceptual interdisciplinary learning.

The general theory was that mental and kinesthetic images are symbolic representations of experiences of non-verbal learning which is sensory and perceptual activity. These images precede contemplation and conceptualization. Because of the relationships in this procedure, we are able to learn words and numbers. "The visual artist, when he is functioning authentically through expressive structuring of experience into imagery, is an exemplary nonverbal learner."[1]

In 1967 teachers and specialists from many subjects and all levels of instruction joined the art teachers in workshops and began a pilot study. Two years later they developed an interdisciplinary curriculum and began implementing it in the Attleboro schools throughout the grades.

The children learned as they compared forms and other sensory qualities to concepts of general school structured subjects. Also they learned cause and effect of media

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[1]Don L. Brigham, "Visual Art in Interdisciplinary Learning," Programs of Promise, Art in the Schools, ed. Al Hurwitz (New York: Harcourt Brace Jovanovich, Inc., 1972), p. 75.

to parallel common elements of science. The teacher's role became that of facilitator and the success of team teaching was critical to the program.

"Learning Dimensions Program"

The Learning Dimensions Program in two Philadelphia elementary schools concentrated on finding different ways of helping poor urban children learn. Focusing on the learning process meant change, especially in staff development, to help teachers with methods and human relationships.

The program concentrated on "who was learning and how learning takes place."[1] The teacher's role became that of facilitating or guiding the children to find their own answers. Art then, was part of the total program because it was part of the learning process, in accordance with Piaget's theory that "our action on new information leads to learning it by our organizing it--classifying, ordering, matching, verifying," and that people do not learn at the same rate of speed or in the same way.[2] Therefore, Learning Dimensions was an open classroom process and encompassed an integrating of subjects according to the children's interest

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[1]Margaret Bingham, "Learning Dimensions: A Change Model for the Elementary School," Programs of Promise, Art in the Schools, ed. Al Hurwitz (New York: Harcourt Brace Jovanovich, Inc., 1972), p. 62.

[2]Ibid., pp. 63-64.

Art was as important as other content areas. Problem solving activities were utilized which required "choices and decisions that will enable the child to become an independent, thinking human being."[1]

The broad goals were to:

1. make the child's learning processes the center of our concerns,
2. help teachers and school staff make the transition from teacher directed to activity centered classrooms,
3. help teachers, aids, administrators, and specialists identify the learning process in all types of activity.[2]

The success of the program rested on staff development for a total new structure.

Basically the teaching method changed to asking questions and organizing materials that lead to thinking by the children. Teacher expertise was important in team efforts and in structuring learning theory and pupil evaluation. Progress was kept by a daily log for each child, entered by a teacher or the child himself. Parent teacher conferences were held to explain the organizational procedure and to discuss a child's behavioral change at school and at home.

The Learning Dimensions Program was an approach that

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[1]Bingham, op. cit., p. 65.

[2]Ibid.

dealt with total staff involvement in the total learning process, working together at all levels to "change the face of education so that our children's minds and hearts will not die."[1]

"Arts Awareness Program"

Various art museums have adapted the "Arts Awareness Program" which began at the Metropolitan Museum of Art in New York. The program was designed to stimulate young children to explore art through the senses. Through various exercises and phenomenon they were to learn vocabulary, make aesthetic judgments and identify artists' works. The emphasis was process oriented. The issue was that not all children will become artists but all children will become consumers. They will need something on which to base their judgment.[2]

Madeja's "Systems Approach" at CEMREL, Inc.

Stanley Madeja developed a systematic approach to teaching art with a set of individualized aesthetic learning packages for self contained lower unit elementary levels. The program was developed at CEMREL, Inc., the Central Midwestern Regional Educational Laboratory. The purpose of the

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[1]Bingham, op. cit., p. 74.

[2]Lambert Brittain, "Art in Elementary Education Today," Art Education, XXIX, No. 2 (February, 1976), 9.

program was to make the study of aesthetics in the schools on an equal basis with all basic educational studies on the "assumption that children can learn aesthetics in much the same way as they learn arithmetic. The emphasis is placed on perceiving aesthetically, analyzing, judging, evaluating, and producing or performing."[1]

The sequential packages, materials and media are designed for alternative choices to be implemented by a self contained teacher or a specialist who's role is that of a diagnostician. The objectives are stated in behavioral terms. The long range goals allow a foundation for students to later specialize in one or more of the arts and also involve "more students in highly specialized arts activities throughout the total school program."[2]

TEAM TEACHING

Shaplin wrote that team teaching was intended to correct some of the problems of traditional classroom teaching by a team of teachers with varied expertise, giving them opportunity for leadership. Team interaction, use of paraprofessionals, and more efficient use of human and

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[1]Appleby, op. cit., p. 22.

[2]Stanley Madeja, "A Systems Approach to Teaching the Arts," Programs of Promise, Art in the Schools, ed. Al Hurwitz (New York: Harcourt Brace Jovanovich, Inc., 1972), p. 44.

material resources were some of the challenges.[1]

Some further advantages of team teaching, set out by Shaplin, are:

1. Increased instructional efficiency
2. Better use of specialized teacher competences
3. More favorable pupil attitudes toward school
4. Improved teacher attitudes toward teaching as a career.[2]

Up to 1972, according to the Orlosky and Smith study, the team teaching plan had not been in wide use.[3] In some cases, the plan had short trials of one or two years. In others, the essential features had been altered or omitted.

It is assumed, that in a team teaching situation, each member is only part of the total and therefore, share all things common to reach the goals of the group, such as ideas, classrooms, students, evaluation of interactions, etc. Group interaction breeds a dependency from each of its members. Studies have been made which suggest a high rate of friction among team members.[4]

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[1]John T. Seyfarth and Robert L. Canady, "Team Teaching Indications of Expectations and Sources of Satisfaction," Clearing House, XLVII (March, 1973), 420.

[2]Marvin E. Shaw, Michael Stratil, and Gerald Reynolds, "Team Teaching: A Source of Support for Teacher Attitudes toward Teaching," Education, XCIII (February, 1973), 295.

[3]Seyfarth and Canady, op. cit., p. 420.

[4]Ibid., p. 421.

"A central concept in social psychology is that attitudes are formed and maintained through social interaction." This fosters the support of like minded individuals. "For example, Krech, Crutchfield, and Ballachey state that: 'Many of the attitudes of the individual have their source and support in groups to which the individual gives his allegiance.'"[1]

The Di Vista and Merwin study of 1960 showed that a need for achievement is positively correlated with the attitude of teaching as a career, "Data from this study support the hypothesis that attitude maintenance is facilitated by the support of other group members."[2]

Lehmen's survey of 1968 was a response to two questionnaires received Fall of 1970 from 21 teachers and Spring of 1971 from 19 teachers in Southwest Metropolitan schools to find out their reasons for accepting an assignment to teach in an experimental program. Fifteen teachers volunteered. Ten responses dealt with the quality of the program (challenging and innovative). Others had to do with the potential benefits to the students and a few wanted the opportunity to contribute to the training of new teachers. None sighted personal advancement.

Lehman also made an effort to find whether team

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[1]Shaw, Stratil, and Reynolds, op. cit., p. 299.

[2]Ibid., p. 300.

teaching lived up to their expectations. The largest increase in teacher expectation was large group instruction and scheduling students. The final result of the study showed that at the end of one year of team teaching experience, most of the fifteen teachers with previous teaching experience had more satisfaction than with previous teaching situations.[1]

From de Vinci's relating art and science on the basis of their common perceptual process, through today's research from the split-brain experiment of Myers and Sperry, one theme seems obvious. Man has different ways of solving the same problem regardless of the name we give it. Educators realize that intelligence quotient does not represent the total thinking human. There are elements that we use in thinking such as sensory perceptions, creativity, association, orientation to space, etc., which are not directly represented in the I.Q. of an individual.

Education is continuously changing goals and curricula and trying new theories, knowing there will be further change in tomorrow's schools until the needs of all individuals are met.

Our children need to be "taught how to integrate subject matter." The interdisciplinary approach to learning

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[1]Seyfarth and Canady, op. cit., pp. 421-422.

offers a solution. It helps children experience meanings between academic and social problems and thereby reduces fragmented thinking.

Chapter 3

RESEARCH METHODS AND RESULTS OF THE STUDY

DESCRIPTION OF RESEARCH METHODS

Personnel

Students participating in the study were 73 boys and girls from Barlow Granger Elementary school in Des Moines, Iowa. They represented three fifth grade classes from average socioeconomic homes.

The investigator was the special art teacher with eight years teaching experience at the intermediate grade level of two elementary schools. She held a Bachelor of Fine Arts degree with a major in art and all but six credit hours work remaining on a Master of Fine Arts program with a major in art education.

The student teacher held a Bachelor of Arts degree with a major in English and a minor in art. He had been teaching both subjects in a rural Iowa community but did not have state art teacher certification. He was therefore enrolled in a Master of Fine Arts program with certification. He served as a research aid or teacher aid for this study.

Length of Time

The art unit involved in the study required seven weeks with classes meeting every Monday, Wednesday and

alternating Fridays. There was a total of eighteen class periods. Each period was fifty minutes long.

The same classes had social science daily for fifty minutes during the seven weeks and music for thirty minute periods four times a week. A program was given for the parents during the last class period of the unit.

Similarities and Differences in Groups

The three classes were basically the same in ability. General interests and tone of the classes varied slightly.

Methods and Materials

Implementing a semi-team teaching situation on a common subject in a traditional school setting without teacher planning time was done to motivate children toward fuller enrichment and greater learning of that subject. The investigator initiated an interdisciplinary experience to make art part of the general school curriculum rather than an appendage.

The social science,music and art teachers held two meetings after school to work on a unit of African history. The social science teacher presented an outline for his course of study (Appendix A). The art teacher presented art activities, material to be covered in presentation and motivational ideas. The music teacher coordinated African and Negro folk songs with percussion instruments to

motivate the children. The art teacher and art teacher aid worked together planning and preparing visuals, collecting materials and researching for a total of 65 hours spent outside the classroom. The team of teachers also planned a program to be given by the students for their parents at the end of the unit.

The African unit was presented to the children on the same day in all three classes. The upper unit classes were rescheduled to change for that day so that the three fifth grades could come to art consecutively, making it easier for physical changes in the art room where an environment was constructed.

Children entered the front of the art room and were seated in an open area where they were introduced to traditions of religion and symbols of African tribes. This was followed by a story about an African boy who was initiated as an adult by his tribe. At the end of the story a class member was chosen to be initiated. The rest of the class represented the tribe.

The chosen person was led to the back of the room where there was a structure of tables turned on end, lighted with candles and decorated as though it might be an altar or place of importance. In the candle-lighted room, African music began from a record player. Sounds were heard from the dark adjoining supply room from which the teacher aid appeared, masked and in full costume playing the role of a

priest.

As the "priest" danced about the "altar" he gave information to the children that dealt largely with the secrets of the African ancestors and the coming adult responsibilities to the community. He initiated the child by painting his or her face with various symbols which he explained as he used them. The paint was mixed lightly with larger amounts of cold cream which was easily removed at the end of class. The class was seated on the floor in front of the altar as their representative approach the "priest" with obvious mixed emotions.

This process was done for each of the three fifth grade classes. Thus the mood and motivation were established for the African art projects that followed. The following day the regular class schedule was resumed and different art projects were introduced to each class. Further history was given and visuals were shown as it related to the projects.

Several art projects had been planned to give the children choices of what appealed most. The major emphasis was on types of art work for which the African would have a specific use, such as: the masks were used in ceremonial dances at which times the rattle and bisonage bells were used for percussion. Also emphasized was signs and symbols whose meanings were derived from primitive religion, superstition and legend. The designs in African art were not only important in early work but remain significant in today's

cultures.

Environment in the art room was helped by two bulletin boards, one with a collection of photographs dealing with Africa, and the other with a series of reproductions of African masks in black and white. Books were set on a counter to be used for reference. One of the teachers who had been a missionary in Africa for 14 years, loaned her art collection which was on display.

The art teacher presented examples of crafts the children could make. There was a discussion on how to achieve different effects for the finished product. For example: if the choice was a papier mache mask and a metallic finish was desired, the mask could be covered with aluminum foil, painted with India Ink and rubbed down with steel wool. It could also be painted or stained to look like wood.

Certain projects were for small groups while others were individual projects. Each child wrote his name and first and second choice of projects on a strip of paper, gave it to the art teacher who assigned the projects, decided the groups (considering personalities), and prepared the materials. She arranged for every child to have their first choice.

On the third day of art the children made plans and were divided into small groups (where applicable). Materials were prepared and the activities began as follows by class:

5M *Papier Mache Masks
Leather and wood amulets

5P *Percussion instruments (rattles, drums) papier mache
Bisonage bell made of wood
Printmaking ("Saying Good-by Cloth")

5H Wood sculpture of animals or masks
Clay amulets

*These activities were developed for small groups. The other activities were individual. Each child in the 5M and 5P classes participated in one group activity as well as an individual activity. Enrichment activities for all three classes included the making of decorative pins or mankala games which served to further experience and interest in African art.

Children participating in group projects were assigned different sections of the art room according to their activity. A general explanation about design was given for each project to the entire class. Patience was stressed at this point. The children were interested in each other's projects but satisfied with their own. No one asked to change.

Papier mache projects were organized within groups: one person filled a plastic container with pre-mixed wheat paste from a dishpan. A second person spread newspaper on the working surface and picked up a paper sack of newspaper strips which the group had prepared earlier. The third person (where present) removed the project from storage. The children followed through with their jobs at clean up time.

Left over wheat paste was stored in plastic containers for the next period at which time the old paste was used first and a new batch was made. The children who made rattles organized as a group but made their rattles individually.

The children who made bells first made a pattern and transferred it to pieces of wood. They used coping saws to cut it out and glued the pieces together after which they sanded, burned in the design, stained (if desired) and shellacked. One person distributed and collected the tools. Each person was responsible for his or her own storage and cleanup.

Having motivated and organized the groups, the teacher then began each class period with general information: updating the progress of each group and setting their goals for each period. This took approximately five minutes and served the purpose of keeping everyone posted, interested in each others project and unified the class toward a total accomplishment. During the period the teacher and teacher aid moved from group to group, giving help and instruction as needed.

Counter space was provided by the teacher for shellacking wooden bells. Paste monitors served as paint and polymer monitors while papier mache projects progressed. Paint colors were decided by the classes, mixed ahead of time and divided into several jars to make easy distribution for all groups. The procedure of using polymer was the

same. One person washed brushes in each class.

Evaluation of the art projects was done in each class using a critique style. Students discussed their work and their cooperation (on group projects). Feedback was sought concerning the way the unit was taught. Children orally answered four questions pertaining to their attitude about the interdisciplinary experience.

Grading was on the basis of C (commendable progress), S (steady progress) and M (minimal progress), according to the progress reports of the Des Moines Public School system for elementary children.

All the children made folders for social science which were graded on a point system. There were a maximum of 100 points. Seventy points were possible for basic requirements and completion and a total of 30 points could be earned for extra credit work and quality of work. Comments were written by the teacher with positive notes in areas of improvement. The children included in their folders many drawings of pictures and masks from bulletin boards in the art room. A few children wrote articles about African history from the presentation given in the art classes. Some children wrote about their art project and how it was done. Folders were handed in to the social science teacher on the last class period of the unit at which time he administered a final test (Appendix B) covering all of the material learned in class.

Upon completion of the unit, the children made invitations in art class with pen and ink, inviting their parents to the art room for an African program. The scheduling of classes again was changed so that all three fifth grade classes met in the art room for the last period of the day.

The program began with an introduction to the parents explaining how the teachers put the unit together and what they had hoped to accomplish for the children. Then all three classes came into the art room and took their places on the risers. The music teacher introduced the instruments made in art, sampled their sounds and the children sang African songs and Negro spirituals accompanied by their hand-made instruments. This was followed by a panel discussion of three members of each class and lead by questions from the art teacher. The purpose was to explain the art work on display, what they did and why they did it. The program concluded with another panel of students answering questions about social science from the parents. Parents had been handed a social science outline (Appendix A) from which they formed their questions. The students' miniature African villages and folders were on display.

Following the one-hour long program, the children were dismissed and some parents remained to view the work, while those parents with pre-school children left.

When group art projects were finished and the

children could take them home; there were no arguments or ill feelings as to whom the objects belonged. Three groups flipped a coin while in the other groups the decision was pre-determined. No one left anything behind and nothing was destroyed.

RESULTS OF THE STUDY

Four evaluation questions provided immediate feedback of student attitude for the interdisciplinary experience. Each class discussion was approximately twenty minutes. There were no negative comments. The suggestions represented approximately 90 percent of the students. Ten percent were undecided. The following questions were asked:

1. Question: Did you like studying Africa in more than one class? Why or why not?

   Result: The children liked studying different things about Africa in each of their three classes, during the seven week unit. They also liked moving from one class to another still thinking about Africa.

2. Question: Do you think you learned more, the same, or less by the interdisciplinary experience?

   Result: The children believed they learned more by coordinating the three subjects. In fact, the tests given in social science at the end of the unit showed that far more was learned from this experience than was learned by the three fifth grade classes who studied Africa only in social science the previous year. In general, the children were much more motivated and did far more extra credit work outside class for their social science folders. The folder covers and pictorial content showed greater care and interest from the standpoint of art work. The

content of information was more extensive as compared to the previous year.

3. Question: What did you especially like or dislike about what you did and/or why you did it?

   Result: The students especially liked the idea of different art assignments for each art class. They enjoyed sharing the information and viewing the other projects. They liked giving the African program for the parents. One child said she liked learning all the songs.

4. Question: If you were going to study early English history, what suggestions do you have on the way you would like to study it?

   Result: If the children were to study early English history they would have liked to include more subjects, study the language and literature in language arts, some games in mathematics and dances in physical education.

Forty-nine adults were present for the program, representing parents of 42 of the 73 students. Following the program, three mothers stated that they liked their children having this experience and hoped more learning would be done this way. They said their children were very excited about Africa and came home talking about it frequently.

Cooperation and sportsmanship on group projects had been stressed. Some children who were somewhat anti-social in individual activities and inclined to waste time, were leaders in group activities and encouraged the contribution of each member by his own example. There were no disagreements. Each child chose his activity. The teacher assigned children to the groups by their choice of activity and personality.

Evaluation was understood from the beginning. Only one child asked his grade. Students were satisfied because they voiced their opinion in discussion.

The children were proud of their efforts and their products. Motivation was very high throughout. They could not wait to get in the room each day and get started. With varied enrichment activities they were not bored and would have been willing to continue the unit.

TEACHER IN-SERVICE

Part of the design of the African unit included an in-service meeting of all the 23 teachers at Granger school. The purposes were: (1) to give self-contained teachers some input on coordinating subjects, and (2) to give departmentalized teachers input on semi-team teaching situations and some enthusiasm on using specialists as part of the total curriculum.

The three teachers discussed the following broad areas: purpose, procedure or method, evaluation, and advantages and disadvantages of coordinating subjects. They showed examples of student work. The social science teacher showed several student folders and noted the volume of outside work in them, done on the basis of interest. The music teacher discussed how she taught rhythms in advance, that were to be transferred to the use of the art instruments upon their completion. She advised that if others

were interested in doing a unit cooperatively next year, to make their intentions known before school ends so that those who need time to develop their units could have the summer to work.

All teachers listened well. One suggested meeting next year on Wednesday afternoons for preparation and planning instead of a weekly teachers meeting and in-service. The principal was not present but had previously voiced his reluctance to dismiss his Wednesday afternoon plans for the faculty. Five teachers looked over the projects following the meeting and asked questions about specific art techniques. One teacher and a visiting teacher said they found the information interesting. Another fourth grade self-contained teacher expressed her wish to have an art specialist meet the needs of all the grades.

The language arts teacher, who had not been included in the African unit, attended the program for the parents and showed interest in the procedure. Six other teachers who had not been in the art room during the eight years of the art teacher's assignment to this school, came to view the displays. One said she would like to bring her class. The interest traveled by word of mouth and some glimpsed the displays as they passed the door.

THE FOLLOW-UP INTERDISCIPLINARY EXPERIENCE

A follow-up experience was implemented in interdisciplinary teaching the following year at Barlow Granger Elementary school with two fifth grade classes. There was a control class of 23 boys and girls and 25 in the experimental class. Both classes studied the same African unit in social science and had the same final test. They made African villages and folders for their activities.

The art teacher presented the same African unit material in a similar way as in the study to the control class only. She used a different story for motivation. There was no "initiation ceremony" due to the absence of a teacher aid. The room environment was not changed, but slides of African art were used in this presentation.

Classroom organization was the same for group projects as it had been the previous year. Evaluation consisted of several questions and oral answers. Grading was the same as in the study.

The music teacher was not available to participate in this follow-up experience; therefore, the African program for the parents was eliminated. There was a display in the art room of all work at the end of the unit.

An in-service for teachers was not held because there had been one the previous year covering the same material.

The purpose of the follow-up experience was to

obtain data concerning the students' attitude about an interdisciplinary unit of study. The instrument was an attitude test (Appendix C) designed by the art teacher. It was used as a pre-test and post-test with the experimental class. The results showed that there was very little change in student attitude from the follow-up interdisciplinary experience.

I.Q. scores obtained from fourth grade Iowa Basic Skills tests and the African unit social science final test scores were compared on an individual basis to see if the children's test scores related directly to expectations based upon the I.Q. ratings. The results showed that half of both classes exceeded their potential and the other half fell below their potential. The implications of this comparison tended to show that the interdisciplinary experience had no increased effect on the motivation of students to learn.

The following chapter contains conclusions drawn from the study and the less successful follow-up experience.

Chapter 4

SUMMARY AND CONCLUSIONS

SUMMARY

The purpose of this report was to investigate the study of Africa in art and social science and its influence on motivation and interest for children. A further purpose was to experience the study in a traditional school setting as opposed to an open space school where such a study is more easily facilitated and therefore more likely to occur. The investigator intended to show that art influenced general learning thereby tending to make art part of the general curriculum rather than an appendage. The writer brought together literature in four related areas to substantiate her theory of stimulating children to learn more and influencing their performance level through an interdisciplinary experience.

This investigation used 73 fifth grade students in a study at Barlow Granger Elementary school in Des Moines, Iowa for seven weeks. The students were evenly distributed into three art classes taught by the writer. While the children were studying Africa in their art classes, they were also studying its culture, geography, natural history, tribes and animals in social science, plus rhythms, instruments and songs in music. This trio of subject areas

provided an interdisciplinary learning experience for the students. All three classes brought the African unit together at the end with a program given by the children for their parents. The social science, music and art teachers followed through with an in-service for all teachers in the Granger School building and shared their experience in an effort to promote innovation in teaching methods and the significance of art in general learning.

The responses of children, parents, and teachers to this unit of study were positive and the overall results were judged to be successful.

One year later the social science and art teachers planned a follow-up African unit for two fifth grade classes at the same school. An experimental class of 25 students and a control class of 23 students represented the population for this interdisciplinary experience.

Both classes covered the same material and activities in social science. The experimental class had African projects in art and the control class did not. The art teacher gave a pre-test and post-test (Appendix C) to the experimental class regarding their attitudes toward studying Africa in art and in social science classes.

The results of the test showed that there was little change in attitude as a result of the interdisciplinary experience. Thus the outcomes were quite different than for the initial experience and this difference will be discussed

in the next section. Conclusions will be drawn concerning the significance of the findings from the study and the follow-up experience. Suggestions will be made for further research.

CONCLUSIONS

The writer felt that the total involvement of working with teachers and students in the interdisciplinary experience, organizing the related material, and the rethinking of content and presentation of the African unit to the children were valuable to her.

The writer concluded that the interdisciplinary experience was of value to the children because it did motivate them well, stimulate their interest to learn, and encouraged their cooperation. However, the study indicated more interest from the children in coordinating subjects, both at the time of the study and for the future, than did the follow-up experience.

The relationship of the social science test scores compared to the I.Q. scores of the experimental group and the control group in the follow-up interdisciplinary experience, showed that both groups learned the same on the average. Therefore, the second interdisciplinary experience did not promote general learning nearly as much as in the initial experience.

The writer concludes that student motivation and

interest was less in the follow-up experience compared to the study because:

1. There were fewer subject areas involved. Music was included in the original study. Percussion instruments made in art were used for music, and the music performance for the parents added interest to the African program given by the students. Most children like to perform in groups and their parents enjoy seeing them. Therefore it would seem advantageous from the perspective of this study to include three rather than two subject areas in an interdisciplinary experience.
2. The absence of a teacher aid made more work for the art teacher in the presentation, preparing project materials, and working with the children during art classes.
3. The "initiation ceremony" conducted by the teacher aid and the room environment provided in the study stimulated emotions and was entertaining and educational for the children. It had far reaching effects. More than two years later the students who were involved (now entering eighth grade) come back and visit and still talk about the "initiation ceremony." The lack of this experience in the follow-up study was noticeable. Because of it there was less enthusiasm and less motivation.

4. The African program for the parents was stimulating for the children. It provided an opportunity to bring all the learning experiences together so the students could see not only what they had accomplished but what others had accomplished toward a total interdisciplinary experience. This too was a learning experience because as they shared, they also learned from each other.

A very positive point was behavioral changes in some children who had previously been mischievous and underachievers. When groups were organized, the students determined the expertise present and used it to the group's advantage. This brought out individual strengths, significantly raised self confidence, and improved leadership qualities. Far reaching effects of the behavioral changes were evidenced in art projects that followed throughout that school year and the next. The writer concluded that these changes tend to be permanent because the children experienced a personal feeling of success by realizing their own strengths. She further concluded that small group interaction promotes peer approval.

When children have self confidence, are satisfied with their efforts and can voice their opinions, they tend to be far less concerned with their grades. It is the opinion of the writer that elementary art work should not be graded. Instead the emphasis should be placed on the

greater rewards of behavioral changes, self esteem, and accomplishment according to that special human being, the individual child.

The response and interest from the teacher in-service session gave evidence that teachers are interested in innovative programs. Self contained teachers lack a background for teaching art. It is therefore difficult for some of them to use art to promote general learning even though they do see the advantages.

Granger School, where the study and the follow-up experience were done, is a traditional school where each teacher has his or her own classroom. The upper unit (fifth and sixth grades) is departmentalized with an art specialist, physical education teacher, mathematics teacher, music teacher, science and social science teacher, teacher-librarian, and language arts teacher. The children pass to these classes according to a schedule made by the principal. Each full time teacher theoretically has three 30 minute planning periods per week while their class is having music. The planning periods are not consecutive. Therefore, teachers planning for an interdisciplinary experience in this traditional school have to work together after school because their planning times are singular, the music teacher having one class at a time and thereby relieving the classroom teacher for free time. There are problems not only in time for a team of teachers to plan

together, but also in scheduling class time. Some times a multi-purpose room would be desirable. The writer concludes that implementing an interdisciplinary experience in a traditional school setting can be done as successfully as in an open space school, where this type of teaching is more easily facilitated. Teachers can manipulate the elements of their particular school.

LIMITATIONS OF THE STUDY

One weak point in the study was the lack of data: first, about the change in student attitude after the interdisciplinary ex perience, and second, a comparison of social science test scores and I.Q. scores to determine the influence the interdisciplinary experience had upon general learning.

Although the data of these two instruments was part of the follow-up interdisciplinary experience, it did not have the success of the original study because the following elements were missing: a teacher aid helping to share the teacher work load, a motivational involvement like the "initiation ceremony" and the room environment, participation from the music teacher, and culminating experiences such as the African program given by the children for their parents.

IMPLICATIONS FOR FURTHER RESEARCH

There is a need for further research in the field of art education concerning the effects interdisciplinary teaching has on the general learning of children. Studies considering the following areas are recommended for further research:

1. Work needs to be done regarding the effects interdisciplinary experiences have toward positive behavioral changes in children. If there is more opportunity for the success factor in this type of learning, it needs to be evaluated and measured against other learning strategies. Education needs information on the ramifications of behavioral changes.
2. Further studies need to be done comparing the upper unit self contained classroom with the departmentalized system and the role of specialized teachers in either system.
3. Greater efforts are needed in creating innovative ways for traditional classroom teachers to implement elements of the interdisciplinary experience such as team teaching, class scheduling, alternatives to a multipurpose room, etc.
4. Work needs to be done on the humanizing element with regard to definition and application in specific subject areas, teaching methods, and programs.

5. Many educators believe that I.Q. does not represent all of man's intelligence. A great deal of research has been done in the perceptual and creative areas that is linked to intelligence. Further research needs to be done until the schools can have a satisfactory testing program that shows a more accurate profile of the total thinking, learning and emotional individual. Somewhere in this research process, educators may be able to discern, with clarity, the part that art plays in the total learning process.
6. The position an administrator takes in supporting teachers can be critical to innovation. It is important that a principal not only give his permission, but enthusiasm, helping hand and moral support. Further studies need to be done concerning the types of personalities of principals and other administrators who are involved with innovation in the schools and the kinds of success related to those personalities.

After studying literature related to this investigation and implementing the interdisciplinary experience with teachers and children, the writer concludes that art does have a positive effect on the learning process of students through motivation and stimulation. It aids the human element, helps develop self-confidence, promotes the feeling

of success, and provides access to positive behavioral changes. Innovative teaching methods can be implemented in traditional schools where teachers and administrators are willing to be flexible and work together.

Innovation does not require a building with particular physical characteristics. An effective program can be implemented in many different spaces, including spaces outside of the classroom. Positive teacher and administrative attitudes and an openness to new ways of learning are essential to the success of the interdisciplinary process.

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APPENDICES

APPENDIX A

SOCIAL SCIENCE OUTLINE FOR COURSE OF STUDY ABOUT WEST AFRICA

Folder preparation

Continue work on your folder - (Title and Art Work)

The Green Sahara

The People of Africa

Clues to the Past - Historical Evidences about Africa

African Folk Tales - Oral Tradition

Geographical Features - Map Work

The Empire of Ghana

The Empire of Mali

The Empire of Benin - African Art

Journey through Africa - Diary

Climate

The Village Life

The Yoruga of West Africa

Cities of Africa - Modern and Nonmodern

Product Map

The Dogon People - Cliff Dwellers

Animals of Africa

Test - based on information above

Class Project - African Villages

APPENDIX B

SOCIAL SCIENCE TEST ON AFRICA

True or False

_____ 1. The baebab is an African Palm Tree.

_____ 2. From the Atlantic Ocean to the Red Sea there is nearly 3000 miles of desert.

_____ 3. In some of the hottest regions in the desert temperatures can reach 170°F.

_____ 4. At night the temperatures may drop as much as 60-70° in the desert areas of Africa.

_____ 5. Two isolated primitive tribes are the Bushmen and the Pygmies.

_____ 6. Berber tribes attacked early Ghana empires during the 11th century.

_____ 7. From the Folk Tale, "Messengers in the Sky," the messengers left behind, a violin, a bow, and an axe.

_____ 8. Oral tradition is the best type of historical evidence.

_____ 9. West Africans left behind many examples of written work.

_____ 10. The West Africans say that the Hyena is one of the most stupid of all creatures in Africa.

_____ 11. Three countries in West Africa are Mali, Ghana, and Nigeria.

_____ 12. The longest river in the world is the Niger River.

_____ 13. Timbuaktu is a city in the country of Ghana.

_____ 14. Mt. Kilimanjaro has an elevation of 25,134 ft.

_____ 15. Two other mountains are: Mt. Batu and Mt. Kenya.

_____ 16. Ancient Ghana was actually two cities.

_____ 17. The Sahara was once a green fertile area.

_____ 18. Hamites have light brown skin color.

_____ 19. Al-Bakri traveled through Ghana and wrote a book about what he saw.

_____ 20. Nuba huts are made from stone or rocks.

Matching

_____ 21. Sahara

_____ 22. daba

_____ 23. diner or mithqual

_____ 24. oasis

_____ 25. tauregs

_____ 26. Archeology

_____ 27. Kaya Maghan

_____ 28. Roads and Kingdoms

_____ 29. Folk Tale

_____ 30. (illegible)

A. Type of oral tradition

B. Money

C. "King of Gold"

D. Largest desert in the world

E. drum

F. Musical instrument

G. Book by Al-Bakri

H. Bluemen of Sahara

I. Water area

J. Remains from the past

True or False

_____ 31. The Watuse tribe members are 7-8 foot tall.

_____ 32. The Bantus tribes inhabit southern Africa.

_____ 33. Madagascar is an island belonging to Africa.

_____ 34. The Atlas Mt. Range is located in the Northwestern part of Africa.

_____ 35. Lake Victoria is the smallest lake in Africa.

_____ 36. Famine means the same as a lack of food.

_____ 37. The equator runs through Central Africa.

_____ 38. Ashanti, Fanti, and Ga are tribes belonging to the West African Negroes.

_____ 39. In the story, "The Strongman Who Boasted Too Much," Muvunga found out the hard way that he wasn't the strongest man alive.

_____ 40. The Moslem religion is one of the many religions of African peoples.

_____ 41. In the story, "The Singing Drum," Namid's father punished the mean giant by placing in his drum two poisonous snakes, a beehive, and an ant hill.

_____ 42. In the title, "The Three Tasks of Misano," the word task means an impossible effort.

_____ 43. In the story, "The Magic Drum," the turtle was considered very kind and quite generous.

_____ 44. Africa is the second largest continent in the world.

_____ 45. The Arabs are one of the desert nomad tribes.

_____ 46. Mt. Kinta is the highest mountain in northern Africa.

_____ 47. One type of people which occupy West Africa are the isolated primitive tribes.

_____ 48. African people living in the desert areas wear very little clothing.

_____ 49. Scientists have found many beads, harpoons, fish-hooks and other ruins where the Sahara Desert is today.

_____ 50. Africa is a land where jungles are predominant.

APPENDIX C

ATTITUDE PRE-TEST AND POST-TEST

Complete the following two sentences. You may write more than one sentence or a paragraph.

1. Art is the study of

2. Social science is the study of

Put an X by the letter of your choice for each of the following three questions

3. How is Art part of Social Science?
   _____ a. Art is a resource or aid to Social Science.
   _____ b. Art is an enrichment in the life of mankind.
   _____ c. Art is the way one person relates to another or as one person relates to a group of people.
   _____ d. Art is not part of Social Science.

4. How is the study of Africa related to both Art and Social Science?
   _____ a. They are both part of an African's life.
   _____ b. They both contribute to religious signs and symbols.
   _____ c. They both show differences in African tribes.
   _____ d. They are not related.

5. Because I studied Art and Social Science as related subjects, my interest is:
   _____ a. greater than studying them separately.
   _____ b. the same as if I studied them separately.
   _____ c. less than if I studied them separately.